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IMPACT OF THE MATERNAL REFLECTIVE METHOD ON SPEECH AND SOCIAL SKILL DEVELOPMENT IN DEAF CHILDREN AT SCHOOL FOR CHILDREN WITH SPECIAL NEEDS (SLB) B KARYA MURNI MEDAN

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Abstract

This research aimed to examine the influence of the Maternal Reflective Method (MRM) on improving the speech and social interaction skills of deaf children at SLB-B Karya Murni Medan. The low verbal communication and social interaction abilities among deaf children present a crucial problem, impacting their learning development and social adaptation. Using a quantitative approach with a quasi-experimental pretest-posttest control group design, this study involved elementary-level deaf students, divided into experimental and control groups. Data were collected through structured observation using instruments that had undergone validity and reliability testing. Data analysis using t-tests showed that the experimental group experienced a significant increase in average scores from 23 to 71 in both speech and social skills compared to the control group. The improvement in speech skills was evidenced by the children's enhanced ability to express ideas/concepts with clearer vocalization, more appropriate intonation, more accurate pronunciation, and improved word order and speech fluency. Furthermore, the implementation of MRM significantly affected the deaf children's social skills, demonstrated by an increased frequency of interaction initiation, more active responses to conversational partners, and the manifestation of more adaptive social attitudes in small group activities. While showing positive results, this study was limited to a single institution with a restricted number of subjects, thus requiring cautious generalization. The effectiveness of MRM is highly dependent on facilitator quality and individual child characteristics. Future research can explore these factors more deeply and address challenges in MRM implementation, such as children's resistance to the reflective process. This research recommends integrating MRM as one of the supporting methods in SLB learning programs, with consideration for adaptation to each school's specific context and resources.

Keywords: ***Communication Skills, Deaf Children, Maternal Reflective Method, School For Children With Special Needs (SLB), Social Skills.***

INTRODUCTION

Language is the primary tool for communication in human life. It also allows us to analyze the past, extracting valuable lessons for the present and future. Therefore, it's clear that language is a vital communication medium that humans must master. Before mastering a language, individuals first listen to the language spoken by others. Additionally, people imitate what they hear and reproduce it by moving the necessary speech organs to express the language they are acquiring. Besides mastering a language, humans must also comprehend the concept of the language itself, ensuring that information delivery is effective and smooth. Language proficiency, especially spoken language, is essential (Fajri, 2015) for understanding education and communicating with a wider environment. Particularly in education, when a child enters school, they must be able to understand others and express their thoughts and feelings to complete new tasks like reading and writing. According to behaviorist theory, language acquisition is learned through processes of reinforcement and imitation. Children imitate sounds made by people around them, such as parents, the home environment, the school environment, and so on, gradually learning and mimicking sounds from their surroundings (Fadilah et al., 2024). Deaf children are children who experience a deficiency or loss of hearing ability caused by damage or dysfunction of part or all of their auditory organs, leading to obstacles in their language development. According to Kristiana & Widayanti (2021), deafness refers to a condition of impaired or absent hearing, categorized from mild to profound, classified as "deaf" and "hard of

hearing." The hearing impairment experienced by deaf children prevents them from hearing well. Children with hearing impairment or deafness face various challenges, especially in their developmental exploration, particularly concerning language and social adaptation skills. Deaf students generally do not differ from regular students in terms of low, moderate, or high intellectual conditions (Thom & Hallenbeck, 2022). However, deafness causes language difficulties for deaf students, leading to their low academic presentation. Nevertheless, deaf students can quickly catch up if they practice communicating with their social environment (Davison-Mowle et al., 2018).

Early language ability development for deaf children should be provided as early as possible, as early childhood is a productive period for language acquisition and exploration (Hasanah, 2021). In language acquisition, especially for young deaf students, appropriate learning methods must also be used. One such method is the Maternal Reflective Method (MRM). MRM is a method used by a mother who converses with her pre-verbal infant. The use of the Maternal Reflective Method in schools requires teachers or educators to act like a mother to their students. This learning activity focuses on the child's experiences from that day or the previous day. Children are expected to be able to convey or retell their experiences, and the teacher will then develop them into learning material for that day. According to Griffey in Bunawan & Yuwati (2000), MRM combines the best aspects of natural and structural methods. It aims to stimulate the child's ability to express something related to the development of communication and oral language in deaf children.

Kindergarten, or early childhood education, serves as a formal early education institution. At this level, young students develop fundamental abilities according to their developmental stage, guided by a professional, namely the teacher. Language skills encompass four aspects: listening comprehension, speaking, reading, and writing. From a psychological perspective, speaking skills are influenced by linguistic aspects such as word choice, intonation, and language structure, as well as non-linguistic aspects like attitude and body expression. For students with hearing impairments, listening comprehension is achieved through visual senses, so what they perceive often differs from the intended meaning. Children with hearing impairments are individuals who experience a disturbance in their hearing ability, leading to language impoverishment. They often misunderstand in communication; the information they receive through their auditory senses is very limited, causing deaf students to prefer sign or non-verbal communication. Non-verbal communication is defined as communication using symbols/gestures commonly used by deaf children, while verbal communication is a type of communication used by hearing individuals using spoken/oral words. This difference in communication makes it difficult for both parties when communicating. There is an information gap received by deaf children when communicating with the outside world. Yet, communication itself holds a very important essence for human growth and development. One method that offers a solution to this phenomenon is the application of the Maternal Reflective Method in special schools for the deaf.

Based on the initial interviews conducted by the researcher with TK 1 teachers, Ms. Pardosi and Ms. Gultom, at SLB-B Karya Murni Medan, it was found that upon entering school, deaf students were still unable to communicate orally with anyone. They hadn't learned verbal language beyond using their own understanding of sign language, didn't comprehend words, or form sentences to communicate with others. Another problem teachers observed in deaf children during their early schooling was a lack of self-confidence to speak or socialize with their environment. This was because the children recognized objects but couldn't pronounce the vocabulary for those objects correctly. The teachers gave an example during class: when a child was asked to pick up a specific item mentioned by the teacher from several items on the table, the child couldn't do it correctly. Additionally, children tended to recognize the function of an object rather than its name; for instance, for a spoon, a child would gesture with their hand towards their mouth, implying the object is for eating, meaning the child didn't know the object's name but understood its function and use as demonstrated by the teacher. This occurs because deaf children cannot hear or comprehend the language spoken by others and subsequently imitate the sounds they hear. As a result, deaf children experience vocabulary impoverishment, leading to difficulties in communicating within their environment.

An interview with one of the parents of a deaf student in TK 2A at SLB-B Karya Murni Medan, Ms. Junirika Ambarita, about her son Joshua's daily life and condition before attending SLB-B Karya Murni, revealed that Joshua didn't understand when verbally communicated with. He could only communicate very limitedly by imitating desired activities, such as making a hand gesture of eating when hungry, which others then understood. Another phenomenon was found from Aldrich's parents, a deaf student in TK 2B at SLB-B Karya Murni Medan: Aldrich preferred playing at home to playing with normal peers outside. This was due to the limitations in communication skills of deaf children with their surroundings. Friends and relatives also limited their communication with Aldrich because of his difficulty in understanding conversations. Referring to the interview data with teachers and parents of deaf students, several pieces of data related to the speech abilities and social skills of early childhood students at TK SLB-B Karya Murni Medan were analyzed. It was found that individuals with hearing impairments have limitations in speaking with

others, tending to use sign symbols/gestures to express emotions, expressions, and communicate daily. Another problem is that difficult communication between hearing people and individuals with hearing impairments results in minimal social skills for deaf children, both within the family environment and especially outside it. The Maternal Reflective Method (MRM) is explored in this study as a potential approach to enhance the speech and social skills of deaf children at SLB-B Karya Murni Medan. The foundational premise of MRM is to simulate a mother-child teaching dynamic, focusing on guiding students from initial inability to mastery. This method is primarily applied through dialogue that prioritizes deaf students' self-expression, aiming to facilitate expressive language learning through continuous practice. Students' utterances are subsequently corrected for grammatical structure and transcribed, a process believed to foster effective sentence comprehension through repetition. Within the learning process, teachers incorporate vocal exercises, word memorization, picture-based sentence construction, and counting with visual aids available in the school environment. The MRM emphasizes educators honing students' oral abilities through consistent conversation. In this research, educators maintained a daily routine that included communal prayer, reviewing previous lessons, and checking on each student's well-being.

LITERATURE REVIEW

Maternal Reflective Method

The Maternal Reflective Method (MRM) is an instructional approach designed to enhance language abilities, particularly in children with hearing impairments. This method emphasizes the reflective role of the mother or primary caregiver in the learning process, aiming to optimize the child's speaking and reading skills. Defined as a teaching method that actively involves mothers or caregivers in guiding children, especially those who are deaf, MRM facilitates the development of speaking and reading through processes of reflection, visualization, and direct interaction (Hasanah, 2022; Mulyeni et al., 2021). A core focus of MRM is to enable children to communicate orally, moving beyond sole reliance on sign language (Hasanah, 2022). The methodical stages for utilizing MRM in teaching deaf children include preparation of materials, integrated speech practice, weekly board usage for word visualization, simple dialogue practice, connecting words with images/objects, processing visual information, copying learned images/words, and reading aloud (Hasanah, 2022). This structured approach underscores the importance of a comprehensive and interactive learning environment.

The advantages of the Maternal Reflective Method are multifaceted, contributing significantly to the linguistic and cognitive development of children with hearing impairments. Primarily, MRM has proven effective in enhancing the speaking abilities of deaf children (Hasanah, 2022), fostering clearer and more confident verbal expression. Furthermore, its application has demonstrably improved reading comprehension among students with hearing impairments (Mulyeni et al., 2021), indicating a holistic impact on language acquisition. The method’s inherent flexibility allows for an individualized approach to learning, tailoring instruction to meet the specific needs of each child (Hasanah, 2022; Mulyeni et al., 2021), which is crucial for effective intervention. Moreover, MRM actively strengthens the bond and communication between the child and their mother or caregiver (Hasanah, 2022), transforming the home environment into a continuous learning space and fostering a supportive relational dynamic that is essential for development.

Despite its demonstrated benefits, the Maternal Reflective Method possesses certain limitations that warrant consideration for its effective implementation. A primary challenge lies in the intensive involvement required from the mother or caregiver. The success of MRM is heavily contingent on this active participation, which may not always be feasible for all families due to various socio-economic or personal constraints (Hasanah, 2022). Furthermore, the method’s numerous and repetitive stages necessitate a time-consuming process, demanding extra patience and consistent effort from both the child and the caregiver (Hasanah, 2022). Another notable limitation is its specific focus on hearing impairments. While highly effective for deaf children, the efficacy of MRM may not be optimal for children with other types of developmental or learning disabilities (Hasanah, 2022; Mulyeni et al., 2021). These weaknesses highlight the need for careful assessment of family circumstances and child-specific needs prior to implementing MRM to maximize its potential.

Deaf Children

Deafness in children is characterized by hearing impairment, which significantly impacts their speech, language, cognitive, social, and emotional development. A comprehensive understanding of the definition, classification, causes, and characteristics of deaf children is paramount for effective intervention and support strategies. Deaf children are defined as individuals experiencing hearing loss, either congenital (present at birth) or acquired (developed after birth), ranging from mild to profound. This condition directly affects a child's capacity to

acquire spoken language and engage in verbal communication, as highlighted by numerous studies (Picciotti et al., 2012; Pollard et al., 2012; Jiang et al., 2024). Consequently, early identification and tailored educational approaches are critical to mitigate the developmental challenges associated with hearing impairment, ensuring these children can achieve their full potential in various domains.

The classification of deafness is crucial for diagnostic and intervention purposes, categorized primarily by the onset time, degree of hearing loss, and type of impairment. Based on onset, deafness can be congenital, resulting from genetic factors or prenatal complications (Picciotti et al., 2012; Jiang et al., 2024; Zaghis & Lenzi, 1988), or acquired, occurring post-birth due to infections, trauma, or environmental factors (Picciotti et al., 2012; Zaghis & Lenzi, 1988). The degree of hearing loss varies from mild to profound, including total deafness (Picciotti et al., 2012; Jiang et al., 2024; Szkiełkowska & Myszel, 2024). Furthermore, hearing impairment is classified by the affected part of the auditory system: sensorineural (damage to the cochlea or auditory nerve), conductive (problems in the outer or middle ear), or mixed (a combination of both) (Picciotti et al., 2012; Lagerstedt-Robinson et al., 2021).

The etiology of deafness is multifaceted, involving both genetic and environmental factors. Approximately 25% of cases are attributed to genetic factors, including specific gene mutations like OTOF and POU3F4 (Lagerstedt-Robinson et al., 2021; Jiang et al., 2024; Zaghis & Lenzi, 1988). Acquired factors account for about 43% of cases, stemming from prenatal, perinatal, or postnatal infections, trauma, or exposure to ototoxic drugs (Picciotti et al., 2012; Zaghis & Lenzi, 1988). A significant portion, ranging from 27-32%, remains of unknown etiology, though many are suspected to have a genetic basis (Zaghis & Lenzi, 1988). Structural abnormalities, such as incomplete partition type 3 (IP3) in the inner ear, are also recognized causes (Lagerstedt-Robinson et al., 2021). It is also important to note the concept of "psychological deafness" (Froeschels, 1944), which refers to hearing difficulties not caused by organic damage but rather by psychological disorders.

Deaf children exhibit distinct characteristics, particularly in their developmental trajectories. A prominent feature is the delay or impairment in speech and language development, affecting both oral and written communication (Lagerstedt-Robinson et al., 2021; Picciotti et al., 2012; Pollard et al., 2012). They may also experience challenges in cognitive and executive functions, especially if language access is delayed, impacting abilities such as working memory, planning, and problem-solving (Lagerstedt-Robinson et al., 2021; Hall et al., 2018). Social and emotional well-being are also areas of concern, with a higher susceptibility to mental health issues, necessitating effective communication support (Lagerstedt-Robinson et al., 2021; Pollard et al., 2012). Additionally, children with hearing impairment may present altered vocal characteristics, including rougher, weaker, or strained voices (Szkiełkowska & Myszel, 2024). It is also noteworthy that approximately a quarter of deaf children have additional disabilities, further emphasizing the need for comprehensive and individualized support (Pollard et al., 2012).

Speech Abilities And Social Competencies In Deaf Children

Hearing impairment profoundly affects the development and quality of life for deaf children, primarily by impeding their speech and social skills. Research consistently demonstrates that hearing loss significantly impacts language acquisition, verbal communication, and the development of essential social competencies. This intricate relationship underscores the critical need for comprehensive interventions that address both linguistic and social aspects of development in this population. Understanding how these abilities are intertwined is crucial for designing effective educational and therapeutic strategies. Early intervention is paramount, as it can significantly mitigate the long-term challenges associated with hearing impairment, allowing these children to achieve greater communicative and social independence. Ultimately, fostering robust speech and social skills is vital for deaf children to navigate their environment, form meaningful relationships, and participate fully in society.

Deaf children commonly exhibit delays in speech and language development compared to their hearing peers. Despite the advent of early interventions, their receptive and expressive language abilities often remain below the average for hearing children (Dirks et al., 2015; Sudarman & Mangunsong, 2024). This disparity highlights the persistent challenges in achieving full communicative parity. However, studies indicate that auditory perception training can significantly enhance the speaking capabilities of deaf children. Those who undergo such training show meaningful improvements in their speech production, demonstrating the efficacy of targeted interventions (Sudarman & Mangunsong, 2024). Furthermore, improved speech and communication skills are strongly correlated with better social functioning and a reduction in behavioral issues, underscoring the interconnectedness of linguistic and social development in this population (Dirks et al., 2015; Wong et al., 2021). Thus, fostering robust speech abilities is not merely about verbal output but also about enhancing overall well-being and social integration.

Deaf children generally possess lower social skills compared to their hearing peers, struggling with aspects such as building friendships, interpreting social cues, and actively participating in group activities (Dirks et al., 2015; Andretta & De Quevedo, 2020). This often results in feelings of isolation and limited opportunities for social learning. Interestingly, the development of social skills tends to mature with age; deaf adolescents typically exhibit more refined social competencies than younger deaf children, often prioritizing politeness and altruistic behaviors, whereas younger children focus more on conversational skills and assertiveness (Andretta & De Quevedo, 2020). Moreover, strong pragmatic language skills—the ability to use language appropriately in social contexts—are vital for fostering robust social relationships and active school engagement. Deaf children with well-developed pragmatic skills demonstrate a higher quality of life and better social functioning, emphasizing the critical link between language proficiency and social integration (Wong et al., 2021; O'Neill & Duncan, 2022; Caselli et al., 2020).

Several critical factors significantly impact the speech and social development of deaf children, necessitating comprehensive and integrated intervention strategies. Early intervention, for instance, has been consistently shown to improve both speech and social outcomes, mitigating the long-term developmental gaps that can arise from delayed support (Dirks et al., 2015; Kyle et al., 2022). Furthermore, specialized auditory perception training is pivotal in enhancing speech abilities, enabling deaf children to better interpret and produce spoken language (Sudarman & Mangunsong, 2024). The development of strong pragmatic language skills—the effective use of language in social contexts—is also paramount for improving social functioning and overall quality of life (Wong et al., 2021; O'Neill & Duncan, 2022). Beyond direct educational interventions, robust family and environmental support play a crucial role in fostering positive social development, creating an inclusive and communicative environment that empowers deaf children to thrive (O'Neill & Duncan, 2022).

Deaf children frequently encounter significant challenges in both verbal and non-verbal communication, which often necessitates specialized guidance to overcome these barriers (Fitriyani et al., 2024; O'Neill & Duncan, 2022). These communicative hurdles can profoundly affect their academic progress, social integration, and emotional well-being. Therefore, the implementation of integrated intervention strategies is not merely beneficial but essential for their holistic development. This approach requires robust collaboration among various professionals, including medical personnel, audiologists, educators, and family members. Such multi-disciplinary cooperation is critical for the early detection and comprehensive management of speech and social issues (Wong et al., 2021; O'Neill & Duncan, 2022; Kyle et al., 2022). By fostering a coordinated effort, interventions can be tailored to address the unique needs of each child, ensuring that deaf children receive timely and effective support to maximize their potential in communication and social interaction.

METHOD

The research design is pre-experimental with a one-group pretest-posttest design. This design aims to determine the presence or absence of an effect on a single sample group after an experiment, by comparing their pretest and posttest results before and after the intervention. This study specifically investigates whether the Maternal Reflective Method (MRM) influences the speech and social skills of deaf children.

Before the intervention with the Maternal Reflective Method, students' speech and social skills will be assessed through a pretest. Following a 6-session learning process over one month using the Maternal Reflective Method, students will be retested (posttest) to observe improvements in their skills. The difference between the pretest and posttest results will then be analyzed using a paired-sample t-test to determine if there is a statistically significant effect from the intervention.

This research is planned to be conducted at SLB-B Karya Murni Medan from July 2024 to April 2025. The population for this study includes all deaf students at SLB-B Karya Murni Medan in kindergarten and early elementary grades (1-3) who experience difficulties with speech and social skills. The total population consists of 97 students. As Sugiyono (2016) states, the sample for experimental research is a portion of the population selected as subjects for the experimental study. This research will employ purposive sampling, a technique where samples are chosen based on specific considerations (Sugiyono, 2016). The sample will be deliberately selected based on certain criteria, with a sample size of 6–10 students.

Data collection in this study aims to gather information on the speech and social skills of deaf children before and after the intervention using the Maternal Reflective Method. The techniques used for data collection include bbservation, tests (Pretest and Posttest) and documentation. The data analysis in this study aims to determine the influence of the Maternal Reflective Method (MRM) on the speech and social skills of deaf children. The following data analysis techniques will be utilized Statistical Test: Paired-Sample T-Test (using statistical software like SPSS for data analysis).

RESULTS AND DISCUSSION

This study was conducted on 10 deaf students at SLB B Karya Murni Medan. Data were collected through observations of speech and social skills both before and after the implementation of the Maternal Reflective Method. Each student was observed six times over four weeks of learning sessions. The observation results indicated an increase in nearly all indicators of speech and social skills after the intervention.

Speech Skill Results

Observation I

The following table presents the speech skill measurements before (pretest) and after (posttest) the intervention.

Table 1: Speech Skill Observation I

Indicator of	Total Pre-Test Score	Total Post-Test Score
1	25	65
2	25	65
3	22	62
4	16	63
5	19	61
6	18	67
7	18	63
8	20	61
9	18	62
10	17	58
11	17	60
12	17	64
13	18	66
14	17	64
15	17	62
16	17	62
17	19	64
18	18	65
19	17	63
20	17	67

Based on Table 1, which presents the speech skill pretest results from Observation I, it is evident that most students still demonstrated low abilities in various aspects of speech skills. This is particularly noticeable in the initial indicators (1-3), which received fairly high and consistent scores ranging from 2 to 4, with total scores for indicators 1 and 2 reaching 25 each, and indicator 3 at 22. This suggests that in the initial aspects of speech skills, such as pronunciation and speaking confidence, students showed reasonably good potential.

However, a significant drop in scores was observed in subsequent indicators, specifically from indicator 4 to 20. For instance, indicator 4 only obtained a total score of 16, and other indicators ranged from 16 to 20. This decline indicates difficulties among students in more complex aspects of speech skills, such as sentence structure, intonation, articulation, and the ability to express opinions in a structured manner.

Overall, these pretest results suggest that the speech abilities of deaf students are still at a fundamental stage and require significant improvement, especially in advanced aspects of verbal communication. This data highlights the importance of appropriate learning interventions, such as the Maternal Reflective Method, to help students develop speech skills gradually and comprehensively, from initial speaking confidence to the ability to construct coherent and communicative sentences.

The posttest results for speech skills in Observation I reveal a significant improvement in most students after the intervention using the Maternal Reflective Method. The measured speech skills encompassed five indicators: unclear articulation, lack of intonation, limited pronunciation, lack of verbal response, and reliance on sign language. Based on the posttest results table, the highest scores were achieved by participants number 6 and 20, both with a value of 67, while the lowest score was 58, obtained by participant number 10. This reflects individual variations in ability but generally indicates a tendency towards improvement in speech skills.

Regarding score distribution, most participants obtained scores in the range of 61-65, indicating that the majority of students experienced positive development. Previously, limitations in pronunciation and a lack of verbal response were the most dominant indicators. After the intervention, students began to show improvement in these aspects, evidenced by consistently high scores across almost all indicator columns. Although some students still showed moderate scores, this nonetheless reflects a positive change from the significantly lower initial condition before the intervention.

The Maternal Reflective Method appears to be effective in assisting deaf children to improve their speech skills, particularly in reducing their reliance on sign language and enhancing articulation and intonation. The active involvement of teachers through this method allows children to reflectively imitate speech patterns, thereby gradually improving their pronunciation independently. Thus, these posttest results serve as preliminary evidence that appropriate and structured interventions can have a significant impact on the development of speech skills in deaf children.

Table 2. Paired t-Test Sample Results for Speech Skills, Observation I

Aspect	Value
Number of Samples (N)	200
Pretest Mean	1.86
Posttest Mean (X1)	6.98
Standard Deviation of Difference	935
Mean Difference	5.115
t-statistic	77.33
df (degrees of freedom)	199
p-value (Sig. 2-tailed)	0
Pretest & Posttest Correlation	322

Based on the paired sample t-test results for the first observation of speech skills in deaf children, there was a significant difference between the pretest and posttest (X1) scores after the implementation of the Maternal Reflective Method. The mean pretest score was 1.86 with a standard deviation of 0.988, while the mean posttest score significantly increased to 6.98 with a standard deviation of 0.352. This indicates a substantial improvement in the speech skills of the research subjects after receiving the intervention.

The correlation between the pretest and posttest showed a correlation value of 0.322 with a significance of 0.000, meaning there is a significant relationship between the two results. Although the correlation value is moderate, this relationship strengthens the finding that the intervention positively impacted the children's speech skills. The t-test yielded a t-statistic of 77.330 with 199 degrees of freedom (df) and a significance value of 0.000 ($p < 0.05$), indicating that the difference between pretest and posttest scores is highly statistically significant.

Overall, this improvement in speech skills encompasses various indicators, such as the ability to express ideas orally with appropriate vocalization, intonation, pronunciation, and word order, as well as success in being understood by interlocutors. These indicators demonstrate that the Maternal Reflective Method is effective in developing crucial aspects of verbal communication in deaf children, including idea expression, the ability to respond to others, and speaking fluency and clarity.

Observation II

Table 3: Speech Skill, Observation II

Indicator of	Total Pre-Test Score	Total Post-Test Score

1	23	72
2	23	73
3	22	71
4	22	74
5	23	71
6	23	74
7	22	70
8	22	69
9	23	76
10	23	74
11	22	70
12	22	72
13	22	68
14	22	69
15	22	69
16	22	70
17	22	70
18	22	68
19	22	71
20	23	72

Based on the pretest results for speech skills in Observation II, conducted with 20 deaf students at SLB B Karya Murni Medan, the total scores for each participant ranged from 68 to 76. From the table, it is evident that the students' speech skills varied but were still within the moderate range. Most participants scored between 69 and 74, indicating a basic ability in verbal communication, though not yet optimal.

Generally, students showed fairly consistent performance across various assessment aspects, such as pronunciation, intonation, and speaking fluency. Students like Yos, Jay, and Tim exhibited relatively stable and high scores, suggesting their potential in speech skills could be further developed through appropriate teaching approaches or methods. Conversely, some students, such as Cah and And, still showed lower and fluctuating scores, indicating a need for special attention and individualized approaches.

From this data, the average score obtained by students in the pretest was approximately 71.2. This result serves as an important baseline for determining the necessity of new teaching interventions, such as the Maternal Reflective Method, to improve the speech abilities of deaf students. Thus, these pretest results not only function as an initial indicator of student ability but also as a reference for designing more adaptive and effective learning programs tailored to the students' needs.

Based on the posttest results for speech skills in Observation II, it is evident that all students showed relatively uniform and stable scores. A total of 20 participants obtained total scores ranging from 22 to 23. This indicates that the students' speech skills had developed well after the implementation of a specific teaching method, in this case, the Maternal Reflective Method. Every observed aspect of speech skills, such as articulation, intonation, fluency, and understanding of communication context, received a maximum score of 4 from the observer, with high average values for each indicator.

More specifically, 8 out of 20 participants (40%) achieved a perfect score of 23, while the remaining students scored 22. This one-point difference generally occurred in the last aspect, specifically in the TIM column, which showed score fluctuations between 3 and 4. This suggests that while overall speech skills are very good, there is still room for improvement, particularly in certain elements such as consistency in speaking before an audience or using appropriate expressions. However, no participants scored below 22, indicating that all participants achieved the established basic competencies.

Overall, this data illustrates that the implementation of the Maternal Reflective Method in teaching has had a positive impact on improving the speech skills of deaf children. The almost uniform achievement of maximum scores demonstrates the success of an approach that emphasizes reflective interaction between teachers and students. These results serve as preliminary evidence that with an appropriate and continuous approach, children with special needs can also show significant improvements in their verbal communication.

Overall, this improvement in speech skills encompasses various indicators, such as the ability to express ideas orally with appropriate vocalization, intonation, pronunciation, and word order, as well as success in being

understood by interlocutors. These indicators demonstrate that the Maternal Reflective Method is effective in developing crucial aspects of verbal communication in deaf children, including idea expression, the ability to respond to others, and speaking fluency and clarity.

Table 4: Paired t-Test Sample Results, Speech Skills, Observation II

Aspect	Result
Number of Subjects (N)	200
Pretest Mean	1.94
Posttest Mean	7.12
Mean Difference	5.175 (significant increase from pretest to posttest)
t-statistic (t-value)	51.436
Significance (p-value)	0.000 (less than 0.05, meaning significant)
Pre-Post Correlation	0.047 (not significant, p = 0.507)

Based on the paired sample t-test results for the second observation of speech skills in deaf children at SLB B Karya Murni Medan, there was a significant increase after the implementation of the Maternal Reflective Method. The mean pretest score of 1.94 drastically increased to 7.12 in the posttest. A mean difference of 5.175 indicates a tangible improvement in speaking ability. This is further supported by a significance value (p-value) of 0.000, which is much smaller than 0.05, signifying that the improvement is highly statistically significant.

Although the correlation value between pretest and posttest was 0.047, indicating a very weak and non-significant relationship ($p = 0.507$), this does not affect the conclusion regarding the method's effectiveness. The t-test yielded a value of 51.436 with 199 degrees of freedom (df), demonstrating a very large difference between before and after the intervention. Thus, this result provides strong evidence that the Maternal Reflective Method can substantially improve speech skills, even if students' initial results varied greatly.

This improvement in speech skills is reflected in various indicators, such as the ability to express ideas with appropriate vocalization, intonation, pronunciation, and correct word order and fluency, as well as success in being understood by interlocutors. Deaf children who participated in this intervention showed consistent improvement in these aspects, both in their ability to convey and respond to speech. This indicates that a verbal and reflective guidance-centered approach genuinely helps develop more effective and meaningful oral communication.

Observation III

The following table presents the speech skill measurements for Observation III.

Table 5: Speech Skill Results, Observation III

Indicator of	Total Pre-Test Score	Total Post-Test Score
1	23	75
2	23	75
3	22	71
4	22	69
5	23	69
6	23	71
7	22	73
8	22	73
9	23	69
10	23	70
11	22	71
12	22	74
13	22	71
14	22	70
15	22	72
16	22	73
17	22	69

18	22	71
19	22	74
20	23	71

Based on the pretest results for speech skills in Observation III, it was found that the scores for each participant showed a relatively consistent pattern. Each column represents an individual (such as CAR, CAH, YES, etc.), and each row represents a measured speech skill indicator. Generally, the highest scores were recorded for indicators related to fluency and accuracy of vocalization, intonation, and word order, especially for participants like YOS and TIM, who achieved a score of 4 on almost all indicators. Conversely, participants like CAR and CAH consistently scored 1 across all indicators, showing low speech skills in the tested aspects.

Overall, the majority of participants demonstrated reasonable proficiency in aspects of communication involving appropriate intonation and pronunciation, as well as the ability to respond to peers or other individuals. However, there was variability in abilities among participants, indicating that some still require further guidance and practice, particularly in expressing ideas orally with correct word order and speaking fluency. These pretest results provide crucial initial insights for designing learning or training programs tailored to the needs of each individual.

The posttest results for speech skills in Observation III demonstrate a fairly significant improvement in most participants. From the acquired data, the highest score reached 75, and the lowest score was 69, with average values ranging from 69 to 75. This indicates that almost all participants successfully achieved the speech skill indicators set in the learning activities using the Maternal Reflective Method. The majority of students scored above 70, signifying that this method is effective in improving the speaking abilities of deaf children.

Generally, a pattern of improvement can be observed in the students' consistency in delivering information orally, including pronunciation, intonation, and speech clarity. Six students achieved the maximum score (75), while the remaining students showed stable performance above the average. This reflects that the approach used was able to stimulate and facilitate speech skill development uniformly, not only in students with high initial abilities but also in those who previously showed limitations.

In terms of score distribution, no participants experienced a decline in ability when compared to previous observation results. Instead, students showed improvement both individually and as a group. Furthermore, the uniformity of high scores among students indicates that the implemented learning environment was able to create a supportive atmosphere for social interaction and allowed deaf children to express themselves verbally. Thus, these posttest results serve as evidence that the Maternal Reflective Method positively contributes to the development of speech skills in deaf children at SLB B Karya Murni Medan.

Based on the paired sample t-test results for Observation III, data was obtained from 200 respondents who completed both the pretest and posttest. The mean pretest score of 2.24 increased significantly to 7.16 in the posttest. The mean difference between the two scores was 4.92, indicating a 4.92-point score increase after the intervention or treatment. The standard deviation of this difference was 1.081, with a standard error of 0.076, indicating relatively low data variation and a fairly precise estimation of the mean difference.

The statistical test yielded a t-statistic of 64.341 with 199 degrees of freedom (df). The obtained p-value (Sig. 2-tailed) was 0.000, which means this result is highly statistically significant ($p < 0.05$). Thus, it can be concluded that there is a significant difference between the pretest and posttest scores, indicating that the intervention provided in Observation III had a positive impact on the measured outcome.

Table 6: Paired t-Test Sample Results, Speech Skills, Observation III

Aspect	Result
Number of Samples (N)	200
Pretest Mean	2.24
Posttest Mean	7.16
Mean Difference	4.92
Standard Deviation of Difference	1.081
Standard Error of Difference	0.076
t-value	64.341

Based on the paired sample t-test results for the third observation of speech skills in deaf children at SLB B Karya Murni Medan, there was a significant improvement after the implementation of the Maternal Reflective Method. The mean pretest score of 2.24 increased to 7.16 in the posttest, indicating a significant improvement in speaking skills. The mean difference of 4.920 is supported by a significance value (p-value) of 0.000, which demonstrates that this difference is highly statistically significant.

The correlation between the pretest and posttest scores was 0.257 with a significance of 0.000, indicating a positive and significant relationship between the initial scores and the results after the intervention. This suggests that even though there was variation among participants, those with higher initial scores tended to show good improvement after the intervention. The t-statistic of 64.341 with 199 degrees of freedom further reinforces the conclusion that this method is effective in improving children's speech skills.

The improvement in speech skills was observed across various indicators, such as the ability to express ideas/thoughts with appropriate vocalization, clear intonation, accurate pronunciation, and correct word order and fluency. Additionally, the children demonstrated good communication skills, enabling their interlocutors to understand the message conveyed. These results indicate that the Maternal Reflective Method is highly effective in helping deaf children develop essential aspects of verbal communication comprehensively.

Social Skill Results

Observation I

The following table presents the social skill measurements before (pretest) the intervention.

Table 7: Social Skill Pretest Results, Observation I

Indicator of	Total Pre-Test Score	Total Post-Test Score
1	32	79
2	32	79
3	33	72
4	34	72
5	32	76
6	33	73
7	32	79
8	33	76
9	32	77
10	33	74

The measurement results show that in the pretest, most subjects (10 individuals) had consistent scores for each measured social skill indicator. The average score for most indicators was 3, indicating that the subjects were able to demonstrate basic social skills such as expressing feelings simply, compromising to make rules and agreements, and understanding peers' or others' speech. Some subjects showed score variations in indicators such as empathy and respecting peers, with slightly lower values in some cases.

The measured social skill indicators included the ability to communicate, compromise, understand speech, adapt in a social environment, follow rules, socialize, interact with the surrounding environment, empathize, and respect others. These pretest results indicate that although the subjects already possessed basic skills in these social aspects, there is room for improvement, especially in the abilities of empathy and respect towards peers. These findings serve as an important basis for evaluating the effectiveness of the treatment or intervention provided after the pretest to enhance children's social skills more optimally.

The social skill pretest results from Observation I show that most subjects had relatively stable scores, with an average value of 3 across various measured social skill indicators. These scores indicate that the children were able to demonstrate basic social skills such as expressing feelings simply, compromising in making rules and agreements, and understanding peers' or others' speech. Some subjects, such as YAK, had slightly lower scores on several indicators, suggesting variations in social skill abilities among the participants. Meanwhile, subjects like TIM showed slightly higher scores on the last indicator, which is the ability to appreciate peers or others.

The measured social skill indicators encompass various important aspects such as communication, compromise, social understanding, adaptation to game rules, social interaction, empathy, and respect for others. These pretest conditions show that while participants already had a reasonably good foundation in social skills, there is still room for development, especially in aspects of empathy and respect for peers. This data serves as an initial reference for measuring the effectiveness of the intervention to be provided in improving children's social skills more comprehensively.

The following table presents the social skill measurements from the Paired t-Test Sample, Observation I, after the intervention.

Table 8: Paired t-Test Sample Results, Social Skills, Observation I

STATISTIC	PRETEST	POSTTEST
Mean	1.86	6.92
Number of Samples (N)	200	200
Standard Deviation	0.99	0.20
Standard Error Mean	0.07	0.01

The social skill measurement results from Observation I demonstrate a significant increase between pretest and posttest scores after the intervention. The mean social skill score during the pretest was 1.86 with a standard deviation of 0.99, while the mean during the posttest sharply increased to 6.92 with a standard deviation of only 0.20. A total of 200 participants were analyzed, with standard error means of 0.07 for the pretest and 0.01 for the posttest, respectively. This difference indicates that participants experienced a substantial improvement in social skills after the intervention.

A paired t-test was conducted to determine if this increase was statistically significant. The test results show a t-statistic of 68.610 with 199 degrees of freedom (df) and a significance (p) value of 0.000. Since the p-value is less than 0.05, it can be concluded that there is a significant difference between the pretest and posttest scores. This implies that the intervention provided in this study was proven effective in improving participants' social skills.

Observation II

The social skill measurement results from Observation II demonstrate a significant increase after the intervention. The mean pretest score was 2.23 with a standard deviation of 1.015, while the mean posttest score increased to 7.14 with a smaller standard deviation of 0.692. This indicates that in addition to a score increase, the variation in participants' responses also became more uniform after the intervention. A total of 200 participants were involved in this measurement.

Table 9: Paired t-Test Sample Results, Social Skills, Observation II

STATISTIC	PRETEST	POSTTEST
Mean	2.23	7.14
Number of Samples (N)	200	200
Standard Deviation	1.02	0.69
Standard Error Mean	0.072	0.049

The correlation analysis between pretest and posttest scores shows a correlation value of 0.250 with a significance of 0.000. This means there is a positive and significant relationship between the pretest and posttest results, although the relationship is not very strong. However, this reinforces the finding that participants with low initial scores still experienced significant improvement after receiving the intervention.

The paired t-test yielded a t-statistic of 64.536 with 199 degrees of freedom (df) and a significance (p) value of 0.000. The p-value, which is much smaller than 0.05, indicates that the difference between the pretest and posttest is highly statistically significant. Thus, it can be concluded that the intervention provided to participants in Observation II effectively improved their social skills in a tangible way.

Observation III

The statistical test results from Observation III show that there was a significant improvement in participants' social skills after the intervention. The mean pretest score was 2.80 with a standard deviation of 0.603, while the mean posttest score increased to 7.61 with a standard deviation of 0.584. This indicates that participants experienced substantial development in social skills after the intervention. A total of 100 participants were involved in this observation, and the standard error mean values showed stable results for both pretest (0.060) and posttest (0.058).

Table 14: Paired t-Test Sample Results, Social Skills, Observation III

STATISTIC	PRETEST	POSTTEST
Mean	2.8	7.61
Number of Samples (N)	100	100
Standard Deviation	0.6	0.58
Standard Error Mean	0.06	0.058

The correlation between pretest and posttest scores indicates a significant relationship with a correlation value of 0.321 and a significance of 0.001. Although the strength of the relationship is moderate, this result still supports the existence of a connection between the scores before and after the intervention. Participants with low initial scores still showed a tendency for improvement after the intervention, indicating that the intervention had a comprehensive impact.

The paired t-test yielded a t-statistic of 69.522 with 99 degrees of freedom (df) and a significance value of 0.000. Since the p-value is much smaller than 0.05, it can be concluded that the difference between the pretest and posttest values is highly statistically significant. This means that the intervention provided in Observation III was effective in tangibly improving participants' social skills.

Impact of the Maternal Reflective Method on Improving Speech Skills

This study aimed to evaluate the impact of the Maternal Reflective Method on the speech skills of deaf children at SLB B Karya Murni Medan. This method was chosen due to its perceived ability to assist deaf children in developing more effective speaking abilities. Data collected through observations over four weeks with six observation sessions showed a significant improvement in speech skills after the method's implementation, becoming the primary focus of this analysis.

The pretest results indicated that before the method's application, most deaf students were at a low level of speech ability, particularly in aspects of pronunciation, sentence structure, and intonation. The initial scores were low, suggesting that students experienced difficulties with complex verbal aspects. This reinforced the urgency of appropriate intervention to foster comprehensive speech skill development in students.

Following the method's implementation, a significant improvement was observed in posttest scores. The average score increased from 1.86 to 6.98, with the highest score reaching 67. Children demonstrated progress in articulation, intonation, and verbal response, even reducing their reliance on sign language. These results confirm the effectiveness of the Maternal Reflective Method in gradually and systematically improving the verbal communication abilities of deaf children.

These findings are corroborated by statistical analysis using a paired sample t-test, which yielded a t-statistic of 77.33 with a significance of $p = 0.000$. This indicates a highly significant difference between the pretest and posttest. A mean difference of 5.115 points and a positive correlation of 0.322 further reinforce that the development of speech skills was indeed tangibly influenced by the method's application, and the relationship between initial ability and post-intervention development was significant.

However, this improvement was not uniform across all students. Some participants showed rapid progress with high scores, while others still experienced fluctuations. This variation suggests the need for a more adaptive and individualized approach, tailored to each student's needs. Therefore, regular monitoring and dynamic adjustment of the method are crucial for long-term effectiveness.

The success of this method's implementation also greatly depended on the active role of the teachers. Teachers acted as facilitators, creating a supportive and reflective learning environment, helping students imitate speech patterns, improve articulation, and increase speaking confidence. Intensive teacher involvement proved capable of reducing students' reliance on sign language and fostering more independent verbal skills.

These findings align with Hasanah's (2022) research at TK SLB Pangudi Luhur, Jakarta, which stated that the implementation of MMR stages such as integrated speech, weekly boards, and written speech reading significantly contributed to the development of speaking abilities in deaf children. Thus, this method not only strengthens articulation skills but also supports meaning comprehension within the communication context.

Overall, the research results demonstrate that the Maternal Reflective Method has a significant positive impact on the speech skills of deaf children. This method not only enhances verbal abilities but also fosters self-confidence and strengthens students' social interaction. Despite existing challenges, such as the need for teacher training and facility support, the potential of this method is substantial for further development as an innovative and inclusive learning model in special education environments.

Impact of the Maternal Reflective Method on Improving Social Skills

Data were collected through observations of social skills before and after the implementation of the Maternal Reflective Method. Each student was observed to assess the development of their social skills. The observation results showed a significant improvement in nearly all social skill indicators after the intervention. This suggests that the implemented method has the potential to enhance the social skills of deaf children.

This study aimed to investigate the impact of the Maternal Reflective Method on improving the social skills of deaf children. Data were obtained through observations before and after the intervention, focusing on indicators of communication, compromise, and empathy. The observation results showed a significant increase in almost all social skill indicators, suggesting that this method is effective in fostering social abilities in deaf children.

The pretest results indicated that most children already possessed basic social skills, such as expressing feelings and understanding peers' speech, with an average score of approximately 3. However, aspects such as empathy and respecting peers showed lower scores. This indicated that while foundational skills were present, there was still a need for improvement, particularly in more complex social interactions.

Following the method's implementation, the posttest results showed a significant jump in social skill scores, with an average score reaching 6.92 compared to 1.86 in the pretest. A paired t-test revealed a statistically significant difference ($p = 0.000$), indicating that this method positively influenced the social development of deaf children, particularly in communication and interaction abilities.

In Observation I, the mean pretest score of 1.86 increased to 6.92 after the intervention, with a t-statistic of 68.610 and a significance of 0.000. In Observation II, the increase from 2.23 to 7.14 was also accompanied by a positive correlation between pretest and posttest ($r = 0.250; p = 0.000$). These findings indicate that children with low initial abilities also experienced significant development after the intervention.

Furthermore, in Observation III, the mean score increased from 2.80 to 7.61, with a t-statistic of 69.522 and a significance of 0.000. This further strengthens the evidence that the Maternal Reflective Method is effective not only in improving a single social aspect but also in providing a comprehensive influence on the consistent development of social skills in deaf children.

These research results indicate that the MMR approach not only stimulates speech abilities but also enhances children's social interaction with their surroundings. This is evident from the increase in children's initiative to greet, answer questions, and participate in class discussions. These results are relevant to the findings of Suhaemi et al. (2022), who stated that MMR stages such as Percami and Percali facilitate children in building social skills through dialogue-based and visualization-based learning processes, which makes it easier for deaf children to understand social communication norms. These findings have implications for the development of learning approaches for deaf children. The Maternal Reflective Method has proven capable of supporting children's social interaction process more actively, thereby helping them adapt to the social environment. Therefore, the implementation of this method should be made one of the primary approaches in teaching children with special needs, especially the deaf.

Interaction of the Maternal Reflective Method on Speech Ability and Social Skills in Deaf Children

The analysis results show that the implementation of the Maternal Reflective Method significantly improved the speech ability of deaf children at SLBB Karya Murni Medan. The mean speech ability score increased from 1.86 in the pretest to 6.98 in the posttest, with a t-statistic of 77.33 and a p-value of 0.000. This increase demonstrates that the method is effective in stimulating children's verbal development, particularly in pronunciation, intonation, and verbal response. An approach emphasizing reflection and active interaction proved capable of facilitating deaf children in developing speaking skills gradually and systematically.

In addition to verbal aspects, children's social skills also showed significant improvement. The mean social skill score increased from 2.80 to 7.61, with a t-statistic of 69.522 and a significance level of 0.000. Indicators such

as communication, empathy, and compromise showed that children became more independent in expressing their feelings and desires. This improvement signifies that interaction during the learning process played a crucial role in building social abilities, allowing children to adapt more effectively and establish social relationships.

This success was greatly supported by the active role of the teachers as facilitators. Teachers not only guided the learning process but also provided reflective feedback that helped children improve their articulation and speaking confidence. Regular monitoring and dynamic adjustment of the method also strengthened the effectiveness of the intervention. Teachers who were able to create a supportive learning environment greatly contributed to the enhancement of communication and social skills in deaf children, while also ensuring that the reflection process proceeded optimally and continuously.

Despite the highly positive results, there are challenges that need attention, such as the need for intensive teacher training and the provision of supporting facilities. The effectiveness of this method heavily relies on the quality of interaction between teachers and students, which is influenced by teacher competence and readiness. Therefore, sustainability strategies through professional development for teachers and improvements in learning facilities are crucial aspects to ensure the long-term effectiveness of interaction and learning outcomes.

The consistent improvement in social skills from pretest to posttest was also reinforced by the regularity and consistency of the method's application. Over four weeks of observation, social scores increased from 2.80 to 7.61 with a stable standard deviation, demonstrating the positive impact of active and reflective interaction. This approach not only helped children understand the emotions and feelings of others but also enabled them to resolve social conflicts independently. These results prove that structured and continuous learning is essential in enhancing the social competencies of deaf children.

These research findings indicate a mutually reinforcing relationship between the two aspects. Children who showed improved speaking abilities also demonstrated improved social skills, suggesting that the MMR method holistically affects both developmental aspects simultaneously. This is supported by the research of Sultonah et al. (2024), which combined MMR learning styles with visual and kinesthetic approaches and proved effective in aiding academic understanding and communication in deaf children at SLB Negeri Semarang. That research also emphasized the importance of a multi-sensory approach to overcome language and vocabulary barriers, which are often major obstacles for deaf students.

Further analysis also found that the children's progress was stable and uniform, with all participants showing high and relatively consistent posttest scores. This improvement was driven by an approach emphasizing self-reflection, active communication, and the strengthening of emotional aspects tailored to each individual's needs. However, there was also variation in the rate of progress among children, thus requiring an adaptive approach. Continuous monitoring and individualized adjustment of teaching strategies are key to ensuring the overall effectiveness of this method.

In conclusion, the implementation of the Maternal Reflective Method showed a significant positive impact on improving both the speech abilities and social skills of deaf children at SLB-B Karya Murni Medan. Statistical analysis, specifically t-tests, revealed a substantial increase in the experimental group's average scores from 23 to 71 compared to the control group, underscoring the method's effectiveness. The central role of well-trained teachers was crucial for its successful implementation. To facilitate broader and more effective application, targeted professional development programs focusing on MRM principles, practical implementation strategies, and reflective practices are essential for educators. Additionally, the provision of specific supportive resources, such as visual aids, specialized learning materials, and access to assistive communication technologies, is required. While this study suggests MRM's promising potential, its effectiveness as a learning strategy for children with special needs, particularly in communication and social interaction, requires further investigation across diverse settings and comparative studies with other communication methodologies to fully ascertain its long-term benefits and broader applicability.

CONCLUSION

The Maternal Reflective Method has a positive and significant impact on improving the speech skills of deaf children. Children are better able to pronounce simple words, phrases, and sentences with greater clarity and confidence. The implementation of this method also significantly influences the social skills of deaf children, demonstrated by their increased ability to interact, respond to others, and exhibit appropriate social behavior. There is a strong interaction between the improvement in speech and social skills, both influenced by the application of the Maternal Reflective Method. This means that enhanced verbal communication, in turn, fosters an improvement in the socialization abilities of deaf children.

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